

upper end 250 that is substantially complementary in shape to a rearward portion (to the right in Figure 5) of bottom mullion rail channel 208 with secure press-fit engagement.

[0036] Liner bottom wall 176 extends substantially parallel to and in a spaced apart relationship from case bottom panel upper surface 232, and a foam insulation medium 252 is interposed between liner 108 and upper surface 232 of case bottom panel 156.

[0037] Fresh food compartment 102 extends above liner bottom floor 176 and is insulated by foam medium 252. Front rail 114 includes a grille (not shown) extending on a front face 254 thereof that allows airflow through the grille to ventilate the machinery compartment at the bottom rear end of cabinet 102 beneath case bottom panel 156.

[0038] Cabinet 102 (shown in Figure 1) may be fabricated according to the following method. Inner liner 108 (shown in Figures 1, 2, and 5), including mullion 182 (shown in Figure 2) is inserted into and secured to casing shell 150 (shown in Figure 2) according to known methods and techniques. Mullion strip 110 (shown in Figure 1) is secured to casing outer faces 164, 166 (shown in Figure 2) over mullion 182.

[0039] Lower rail 114 (shown in Figures 1 and 5) is press fit to bottom mullion rail channel 208 (shown in Figures 3 and 5), assisted by bottom mullion guide portion 204 (shown in Figure 3) such that lower rail 114 is securely received in rail channel 208 with an interference fit. Bottom mullion 112 (shown in Figures 1, 2, 3, and 5) is press-fit to inner liner 108, assisted by bottom mullion guide portion 204, such that inner liner flange 180 (shown in Figures 2 and 5) is securely received in bottom mullion liner channel 218 (shown in Figures 3 and 5) with an interference fit. The casing bottom panel 156 (shown in Figures 2, 4 and 5) is press fit to bottom mullion 112 such that retaining tongue 240 (shown in Figure 4) engages bottom mullion engagement surface 220 (shown in Figures and 5). Casing rear panel 158 is attached to casing shell 150 and casing bottom panel 156, and foam insulating medium 252 (shown in Figure 5) is injected between casing 106 (shown in Figures 1, 2 and 5) and the inner liner. The foam insulation is then cured to solidify cabinet 102.

[0040]

Storage drawers 120 (shown in Figure 1), storage shelves, compartment doors 132, 134, (shown in Figure 1) airflow control mechanism 216 (shown in Figure 1) and other noted components discussed in relation to Figure 1 are then secured to cabinet 102

according to known methods and techniques. Refrigeration cycle components (not shown) are mounted in the cabinet machinery compartment and coupled to appropriate controls to complete assembly of refrigerator 90 (shown in Figure 1).

[0041] Therefore, casing bottom panel 156 may be securely attached to casing 106 with a simple and straightforward clip arrangement that avoids additional tooling costs and fixtures for automated equipment to attach casing bottom panel 156 to case 106 after liner 108 has been installed into casing shell 150. Consequently, manufacturing and assembly costs of refrigerator 90 are reduced while using advantageous foaming techniques that reduce stress on liner 108 that may lead to undesirable cracking of the liner in use.

[0042] Moreover, and as best illustrated in Figure 5, bottom mullion 112 substantially eliminates problematic foam leaks in conventional refrigerators in the vicinity of the front rail/liner interface. As is evident in Figure 5, opposing bottom mullion channels 218, 208 that receive liner flange 180 and front rail 114, respectively, are separated from one another due to the configuration of bottom mullion 112. Moreover, contoured lower flange 180 of inner liner 108 forms a double barrier against foam leaks such that when liner flange 180 is tightly press-fit to bottom mullion liner channel 208, it is unlikely that any foam insulation medium 252 will flow past the interface between liner flange 180 bottom mullion third retainer portion 212 (shown in Figure 5), the interface between liner flange 180 and bottom mullion liner base portion 210 (shown in Figure 3) and the interface between liner flange 180 and bottom mullion first retaining portion 202 (shown in Figure 3) to reach the exterior of bottom mullion 112 and liner 108. Foam leaks are therefore substantially eliminated.

[0043] While the invention has been described in terms of various specific embodiments, those skilled in the art will recognize that the invention can be practiced with modification within the spirit and scope of the claims.